

REMARKS

The abstract and specification have been amended in order to correct grammatical and idiomatic errors contained therein. No new matter has been added.

In order to expedite the prosecution of the present application and more particularly point out and distinctly claim the subject matter which Applicants regard as the invention, Claims 1-5 have been canceled and replaced by newly presented Claims 10-13. Claims 6-8 have been amended in order to more particularly point out and distinctly claim the subject matter which Applicants regard as the invention and respond to the Examiner's rejection of the claims under 35 USC 112. It is respectfully submitted that the currently presented claims are cured of all formal defects and are patentably distinguishable over the prior art cited by the Examiner.

Claims 1-8 have been rejected under 35 USC 103(a) as being unpatentable over Muromachi et al. Applicants respectfully traverse this ground of rejection and urge reconsideration in light of the following comments.

One aspect of the present invention is directed to an oyster extract containing zinc in an amount of from 6-14% by dry weight, with the zinc being combined with peptides of the oyster having a molecular weight of 3000 to 5000 daltons, as determined by gel filtration chromatography. Another aspect of the present invention is directed to an oyster extract containing zinc in an amount of from 6 to 14% by dry weight, the zinc being combined with peptides of the oyster, and, optionally, the extract being obtained by a process comprising the steps of extracting raw oysters with hot water to obtain an oyster residue, adjusting the pH of the oyster residue to 2-4 and neutralizing the pH-adjusted oyster residue to obtain a precipitate, or the oyster extract also containing manganese in an amount of 0.05-0.2% and magnesium in an amount of 1-2%, or the oyster extract being combined with another oyster extract obtained by hot water extraction, or the oyster

extract containing zinc in an amount of from 0.05 to 0.4% by dry weight, with the zinc being combined with peptides of the oyster.

As stated in the instant specification, conventional methods of extracting nutrients from oysters use water or hot water and involve a process in which hot water extraction at 50-90°C is conducted for 2-3 hours and then ethanol is added to the extract to obtain a precipitant. With this method, although water-soluble ingredients such as taurine, glycogen and other substances are extracted with the water, water-soluble minerals such as zinc, manganese and other minerals are not extracted.

The present invention provides a method of obtaining an oyster extract which also contains water-soluble minerals such as zinc and manganese in addition to water-soluble components such as taurine, glycogen and nucleotides. The present invention is based on the discovery that the water-soluble ingredients contained in oysters, such as zinc, manganese and other minerals, can be extracted under acidic conditions by adding acid to the oyster residue after hot water extraction. In the present invention, the zinc combines with peptides contained in the oyster to enable the zinc content in the extract to be much higher than previously obtained. This is illustrated in Figures 1 and 2 of the present specification. It is respectfully submitted that the prior art cited by the Examiner does not disclose the presently claimed invention.

The Muromachi et al reference discloses a whey mineral containing at least 0.8 g/kg or above of zinc and a process for producing the same. The whey mineral is said to have good flavors and to be useful in liquid formulae, medical foods, nourishing reinforced foods, functional foods and seasonings. Example 6 of this reference discloses the addition of the inventive whey mineral having a zinc content of 4.6 g/kg, with an oyster meat extract having a zinc content of 2 g/kg and seaweed powder having a zinc content of 31 g/kg to a liquid formula containing 2.5 mg of zinc per 15 ml to form a liquid

formula containing 8 mg of zinc per 1500 ml. As pointed out by the Examiner, the oyster extract of this reference has a lower zinc concentration than claimed by Applicants. This is because the reference cited by the Examiner has no disclosure with respect to performing an extraction with an acid so that the zinc combines with peptides contained in the oyster to produce the oyster extract of the present invention. The zinc content of the oyster extract of the present invention is much higher than conventional oyster extracts due to the zinc being combined with the peptides. This is clearly unexpected in light of the prior art and patentably distinguishes the presently claimed invention thereover.

The Examiner is respectfully requested to reconsider the present application and to pass it to issue.

Respectfully submitted,

  
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